UNITED STATES PATENT AND TRADEMARK OFFICE

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09/893,091	06/27/2001	Ravindra K. Shetty	H00-02099 (256.101US1)	4434

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/893,091	SHETTY ET AL.
	Examiner	Art Unit	
	Peter Choi	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>27 June 2001</u>.

2a) ☒ This action is **FINAL.**   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-60</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-60</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some *   c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-60 are pending in the application. Claims 4, 10, 11, 22, 31, 42, and 43

are amended.

Response to Arguments

2.   Applicant's arguments filed January 9, 2006 have been fully considered but they

are not persuasive.

Applicant argues that Kennedy et al. does not describe the use of the inverse of

the probability of profit in determining a reduction in quantity.

In response to applicant's arguments against the references individually, one

cannot show nonobviousness by attacking references individually where the rejections

are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208

USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir.

1986).

Mathematically, an inverse is defined to be one of a pair of elements in a set

whose result under the operation of the set is the identity element, especially the

reciprocal of a designated quantity (i.e., the inverse of the probability of the profit would

be the probability of non-profitability). As such, the language of "inverse of the probability of profit" suggests that the probability of non-profitability is used.

The Examiner's understanding of the claimed inverse profit probability is that it is directed towards identifying the most profitable product amongst a group of products within a customer order, as presented in the specification. The Examiner formulated an art rejection based on the use and functionality of the "inverse of probability of profit", and did not give weight to the use of the word "inverse".

As presented in the Office Action mailed October 7, 2005, the Examiner took Official Notice that it is old and well known in the manufacturing arts for manufacturers to identify the most profitable product for use/sale. Kennedy et al. is directed towards determining a promise to ship items that optimize the seller's profits, which may result in altering the customer order (by determining an alternate plan or delivering fewer items); thus, profitable items are given priority when formulating said customer orders). Thus, the Examiner asserts that the optimization of seller profits, as taught by Kennedy et al., implicates the identification of the most profitable products of a group of products. The rationale will be further explained in the art rejection below.

Applicant argues that the Examiner did not establish a prima facie case of inherency regarding the step of communicating the reduced quantity to a production management process.

The Examiner respectfully disagrees and will explain the rationale behind the notice of inherency raised. The Examiner asserts that the above-cited step is inherent to the teachings of Kennedy et al., as Kennedy et al. manages the negotiation process and provides human and automated planners with information necessary to effectively plan and schedule the procuring, manufacturing, transportation, warehousing, and shipping operations necessary to deliver requested items [Column 14, lines 34-38]. The Examiner asserts that information pertaining to order quantities would be necessary to effectively plan and schedule procurement, manufacturing, transportation, warehousing and shipping operations; thus the step of communicating the reduced product quantity would be inherent in light of the teachings of Kennedy et al.

Applicant argues that the Office Action only argued that the reduced order quantity would be communicated to production and manufacturing, and is not communicated by a computer as claimed, but rather may be communicated by a human, in contrast to the claimed invention as presented in claim 1.

The Examiner respectfully disagrees. The use of a computer (a "computerized method") exists only in the preamble and does not lend weight to the claim language. Claim 1 does not specify that the communication of the reduced quantity (to a production management process) is performed by a computer; thus, the step of communicating the reduced quantity may be performed through human operators.

It was known at the time of the invention that merely providing an automated way
to replace a well-known activity which accomplishes the same result is not sufficient to
distinguish over the prior art. *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194
(CCPA 1958).

Furthermore, it is well settled that it is not "invention" to broadly provide a
mechanical or automatic means to replace manual activity which has accomplished the
same result. In re Venner, 120 USPQ 192.

Applicant seeks to traverse all takings of Official Notice and requests that the
Examiner to provide references that describe such elements.

Applicant has attempted to challenge the Examiner's taking of Official Notice in
the Office Action mailed October 7, 2005. There are minimum requirements for a
challenge to Official Notice:

(a)   In general, a challenge, to be proper, must contain adequate information
or arguments so that *on its face* it creates a reasonable doubt regarding the
circumstances justifying the Official Notice

(b)   Applicants must seasonably traverse (challenge) the taking of Official
Notice as soon as practicable, meaning the next response following an Office Action. If

an applicant fails to seasonably traverse the Official Notice during examination, his right

to challenge the Official Notice is waved.

Applicant has not provided adequate information or arguments so that *on its face*

it creates a reasonable doubt regarding the circumstances justifying the Official Notice.

Therefore, the presentation of a reference to substantiate the Official Notice is not

deemed necessary. The Examiner's taking of Official Notice has been maintained.

Bald statements such as, "the Examiner has not provided proof that this element

is well known" or "applicant disagrees with the Examiner's taking of Official Notice and

hereby requests evidence in support thereof", are not adequate and do not shift the

burden to the Examiner to provide evidence in support of the Official Notice.

In the previous Office Action mailed October 7, 2005, notice was taken by the

Examiner that certain subject matter is old and well known in the art. Per MPEP

2144.03(c), these statements are taken as admitted prior art because no traversal of

this statement was properly made in the subsequent response.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4.   Claims 1-3, 11-21, and 31-60 are rejected under 35 U.S.C. 112, first paragraph,

as failing to comply with the enablement requirement. The claim(s) contains subject

matter which was not described in the specification in such a way as to enable one

skilled in the art to which it pertains, or with which it is most nearly connected, to make

and/or use the invention.

From the equation provided on page 14 of the specification for the graceful

decrement,

$$\delta t_i = \frac{(\Delta T) \; * \; (\text{profit probability})}{(\text{current number of products}) - 1}$$

the units involved are ΔT (days), profit probability (no unit), current number of products

(no unit).

The resulting unit analysis provides (days * a number)/(a number) = days.

The graceful decrement is supposed yield a reduced number of products;

however, using the formula provided, determines a reduced number of days (resulting

from one less product). For the purposes of the following art rejection, the Examiner has

interpreted each citation of the graceful decrement to be a reference to the change in

production time resulting from reducing the number of products involved in a product

request order (i.e., instead of products X and Y being produced, only product X is

produced).

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

6.   Claims 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

7.   Claim 10 recites the limitation "the predetermined margin" in line 1. There is

insufficient antecedent basis for this limitation in the claim. A predetermined margin is

not cited in claims 4 or 6 (the parent claims of claim 10), thus the term lacks antecedent

basis. However, it is noted that the limitation is cited in claim 8. For the purposes of the

following art rejection, the Examiner has assumed that claim 10 is dependent on claim

8.

8.   Claim 11 recites the limitation "the unit time of manufacture " in limitation (b)(7).

There is insufficient antecedent basis for this limitation in the claim. A predetermined

margin is not cited in claim 4 (the parent claim of claim 11), thus the term lacks

antecedent basis. For the purposes of the following art rejection, the Examiner has

assumed that "the unit time of manufacture" is a reference to the time required to

manufacture a single unit of a product.

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 1-3, 5-8, 10, 16-17, 19-21, 23-26, 28, 30-32, 34-35, 37-41, 43-44, 46-49,

52-56, and 59-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kennedy et al. (U.S Patent #6,055,519).

As per claims 1 and 19, a computerized **(computer implemented)** method for

production management comprising:

determining a reduced quantity of a requested product quantity in a customer

order **(figure out whether filing that request is possible or whether an alternate**

plan is possible {such as delivering fewer items}) in reference to the probability of

profit **(invention can be used in sales environments for the purpose of optimizing**

the profits of the seller) of the product [Column 6, lines 26-33]; and

communicating the reduced quantity **(seller proposes to the buyer a promise**

to ship items at a certain quantity and date, the buyer thinks about the promise

and either reissues an altered request or accepts the promise) [Column 6, lines 37-42].

Although Kennedy et al. does not explicitly teach the step of communicating the reduced quantity to a production management process, it is inherent that once an agreement has been made regarding a customer order (product mix and quantity), said order would be communicated to production and manufacturing facilities to begin processing of the customer order.

Kennedy et al. does not teach the step of determining the reduced quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller; thus, Kennedy et al., implicitly teaches the step of identifying of the most profitable products of a group of products that would enable the maximization of profits. In addition, Official Notice is taken that it is old and well known in the manufacturing arts, that, when possible, manufacturers will identify the most profitable product in a set (usually by comparing the profit margins of each item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to take the probability of product profitability into consideration when determining the reduced quantity, because the

resulting invention would result in an instant analysis of potential increased revenues

and profits (by selling more expensive and/or more profitable items) and the substitution

of said items may enable manufacturers to meet customer demand, as it may require

less production time, or is more readily available.

As per claims 2 and 20, the computerized method of claim 1, wherein the

determining further comprises:

iteratively determining a graceful reduction of the requested product quantity

from a time shortfall **(figure out whether filing that request is possible {due to a**

time shortfall} or whether an alternate plan is possible {such as delivering fewer

items}), from the profit probability **(invention can be used in sales environments for**

the purpose of optimizing the profits of the seller), and from a reduced number of

plurality of products **(figure out whether an alternate plan is possible {such as**

delivering fewer items}), until the customer accepts the reduced quantity or until the

time shortfall is non-existent **(seller proposes to the buyer a promise to ship items**

at a certain quantity and date, the buyer thinks about the promise and either

reissues an altered request to which the seller must generate a new promise, or

the buyer or accepts the promise {which completes the negotiation [the

negotiation process therefore being an iterative process]}) [Column 6, lines 26-42]

Kennedy et al. does not teach the step of determining the reduced quantity

based on an inverse profit probability, but does disclose that his invention is for the

purpose of optimizing the profits of the seller. In addition, Official Notice is taken that it is old and well known in the manufacturing arts, that, when possible, manufacturers will identify the most profitable product in a set (usually by comparing the profit margins of each item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to take the profitability of products into consideration when determining the reduced quantity, because the resulting invention would result in an instant analysis of potential increased revenues and profits (by selling more expensive and/or more profitable items) and the substitution of said items may enable manufacturers to meet customer demand, as it may require less production time, or is more readily available.

As per claims 3 and 21, Kennedy et al. teaches the computerized method of claim 1, the method further comprising:

determining that the requested product quantity can not be satisfied **(whether fulfillment of a customer request is possible)** within a customer target time period **(customer request data regarding relevant items, quantities, and dates are stored)** [Column 3, line 64-67, Column 6, lines 30-31].

As per claims 5 and 23, Kennedy et al. teaches the computerized method of claim 4, the method further comprising:

(c)   communicating the quantity of each of the plurality of products

corresponding to a maximum vendor profit of the requests for a plurality of products.

Although Kennedy et al. does not explicitly teach the step of communicating the

quantity of requested products, it is inherent that once an agreement has been made

regarding a customer order (product mix and quantity), said order would be

communicated to production and manufacturing facilities to begin processing of the

customer order.

As per claims 6, 16, 24 and 34, Kennedy et al. teaches the computerized method

of claim 4, wherein the determining (a) further comprises:

 (a)(2) obtaining customer order data, the data further comprising an identification

of each of the plurality of products, a requested quantity of each of the plurality of

products, and an associated target time of each of the plurality of requested products

(data such as relevant items, quantities and dates) [Column 3, lines 65-67]; and

(a)(5) deter mining that at least one request for a plurality of products exceeds a

production capacity of a vendor **(figure out whether fulfilling customer request is**

possible), from the effective quantity of the at least one of the plurality of products, from

the requested quantity of the at least one of the plurality of products **(customer order**

requests), and from the target time of the at least one of the plurality of products

(customer order date) [Column 3, lines 65-67, Column 6, lines 30-32].

Regarding (a)(1)   obtaining process and inventory operation data, the data

further comprising an inventory quantity for each of the plurality of products;

(a)(3) deter mining an effective quantity for each of the plurality of products to be

produced from the requested quantity of each of the plurality of products and from the

inventory quantity for each of the plurality of products; and

(a)(4) deter mining an actual time to produce all of the plurality of products to be

produced, from the effective quantity for each of the plurality of products to be produced

Official Notice is taken that it is old and well known in the manufacturing arts that

manufacturers are able to assess inventory levels and production capacity (and

performance). From this information, manufacturers can inherently determine the

quantity of products to be produced (the difference between requested quantity and

available quantity) and the time required to produce said quantity of products.

It would have been obvious to one of ordinary skill in the art at the time of

invention to modify the teachings of Kennedy et al. to include the step of obtaining

process and inventory operation data, because the resulting invention would enable

manufacturers to assess the feasibility of fulfilling customer orders facilitating the need

to negotiate a modified customer order such that the terms (date, products, and

requested quantity) can be fulfilled.

As per claims 7 and 25, Kennedy et al. does not explicitly teach the computerized method of claim 6, wherein the obtaining (a)(1) action is performed after the obtaining (a)(2) action. However, it is inherent in the manufacturing arts that customer order requests (product plurality and quantity) must be received before being compared with existing inventory and production capacities in determining the likelihood of fulfillment.

As per claim 81 26, and 41, Kennedy et al. teaches the computerized method of claim 6, wherein the determining (a)(5) further comprises:

(a)(5)(i)   determining that at least one request for a plurality of products exceeds a production capacity of a vendor **(figure out whether filling that request is possible {due to a time-shortfall or insufficient production capabilities})** beyond a predetermined margin [Column 6, lines 26-42].

As per claims 10, 17, 28, and 35, Kennedy et al. does not explicitly teach the computerized method of claim 6 8, wherein the predetermined margin further comprises a predetermined absolute quantity margin.

However, it is inherent that manufacturers lack infinite production capacity and therefore have an absolute quantity predetermined by the number of available production facilities and limited resources.

As per claims 12 and 30, Kennedy et al. does not explicitly teach the computerized method of claim 11, wherein determining (b)(4), further comprises:

(b)(4)(i)   diving the profit of a production of one of the plurality of products in the customer order into the profit of all of the plurality of products in the customer order, yielding a portion of total profit attributable to the one product; and

(b)(4)(ii)   determining a profit probability from the portion of total profit attributable to the one product subtracted from (b)(4)(i).

It is inherent that the percentage of profits from a particular product in an order can be determined by dividing the profit of one product into the profit of all products. It is also inherent that the combined percentage of profitability of all products in an order must add to 100%, thus in an order comprising 2 products, the percentage profit of the second product is equal to 100% minus the percentage profit of the first product.

As per claims 13, 31, 37, and 43, Kennedy et al. teaches a computerized method for production management comprising:

(a)   determining that at least one request for a plurality of products exceeds a production capacity of a vendor **(figure out whether filling that request is possible {due to a time-shortfall or insufficient production capabilities})** wherein the request for a plurality of products includes a quantity associated with each of the plurality of products **(data representing relevant items, quantities, and dates of product**

requests) from process and inventory operation data [Column 3, lines 65-67, Column 6,

lines 26-42]

      (c)   determining a graceful decrement from the time shortfall **(the buyer**

considers the promise and either reissues an altered request, with lower

quantities), from the inverse profit probability, and from a decremented number of

plurality of products **(an alternate plan, such as delivering fewer items {reducing the**

number of products requested});

      (d)   updating the objective value from the graceful decrement [see the analysis

of claim (b)(6) above]

      (e)   determining the actual quantity to be produced for each of the plurality of

products, from the graceful decrement [see the analysis of claim (b)(7) above]; and

      (f)   determining an actual time to produce all of the plurality of products to be

produced, from the actual quantity to be produced for each of the plurality of products

[see the analysis of claim (b)(8) above].

      As per (b)   determining an inverse profit probability from the profit of a

production of one of the plurality of products in the request, and from the profit of all of

the plurality of products in the customer order:

      It is inherent that the percentage of profits from a particular product in an order

can be determined by dividing the profit of one product into the profit of all products. It is

also inherent that the combined percentage of profitability of all products in an order

must add to 100%, thus in an order comprising 2 products, the percentage profit of the second product is equal to 100% minus the percentage profit of the first product.

As per claims 14, 32, 38, and 44 Kennedy et al. teaches the computerized method of claim 13, wherein the determining (a) further comprises:

(a)(1) deter mining that at least one request for a plurality of products exceeds a production capacity of a vendor **(figure out whether filling that request is possible {due to a time-shortfall or insufficient production capabilities})** beyond a predetermined margin, from the requested quantity of the at least one of the plurality of products, and from the target time of the at least one of the plurality of products **(data such as relevant items, quantities, and dates)** [Column 3, lines 65-67, Column 6, lines 26-42].

As per claim 39, Kennedy et al. teaches a computer-readable medium having stored thereon a data structure representing a reduced quantity of a requested product quantity produced by a method comprising:

determining that the quantity of the requested product can not be satisfied by a vendor **(figure out whether filling that request is possible {due to a time-shortfall or insufficient production capabilities})** within a customer target time period [Column 6, lines 26-42]; and

iteratively determining a graceful reduction of the requested product quantity from a time shortfall, from the inverse profit probability, and from a reduced number of

plurality of products, until the customer accepts the reduced quantity or until the time

shortfall is non-existent [see analysis of claim 2 above].

As per claim 40, Kennedy et al. teaches the computer-readable medium of claim

39, produced by the method further comprising:

communicating the reduced quantity to a vendor production process [see

analysis of claim 1 above].

As per claim 46, Kennedy et al. teaches a system for transacting in electronic

commerce comprising:

a processor; and

software means operative on the processor for degrading the quantity of an order

of a plurality of products using an inverse probability of profit function in reference to

profits from each of the products in the order.

Kennedy et al. teaches a computer implemented system and process for

negotiating the sale of goods, inherently requiring the use of a processor (computer)

with software means for degrading the quantity of an order (negotiating a customer

order to alter requested products and quantity) [abstract].

As per claims 47 and 54, Kennedy et al. teaches a computerized apparatus for

production management comprising:

a demand analyzer, that determines if a vendor can satisfy a quantity of

customer demand for a product **(decision process used to figure out whether**

fulfillment of a customer request is possible), from a database of process and

inventory operation data and from a database of customer order data [Column 6, lines

30-32]; and

a graceful quantity degrader, operably coupled to the demand analyzer

{operating on the same computer or computer network}, that yields a degraded

quantity from the quantity of customer demand **(reissues an altered request, with**

lower quantities) [Column 6, lines 26-42].

Kennedy et al. does not teach the step of determining the reduced quantity

based on an inverse profit probability, but does disclose that his invention is for the

purpose of optimizing the profits of the seller. In addition, Official Notice is taken that it is

old and well known in the manufacturing arts, that, when possible, manufacturers will

identify the most profitable product in a set (usually by comparing the profit margins of

each item), enabling them to seek ways to emphasize sales of that particular item or to

substitute requested products with {similar} products with higher profit margins. It would

have been obvious to one of ordinary skill in the art at the time of invention to modify the

teachings of Kennedy et al. to take the profitability of products into consideration when

determining the reduced quantity, because the resulting invention would result in an

instant analysis of potential increased revenues and profits (by selling more expensive

and/or more profitable items) and the substitution of said items may enable

manufacturers to meet customer demand, as it may require less production time, or is more readily available.

As per claims 48 and 55, Kennedy et al. fails to explicitly teach the computerized apparatus of claim 47, wherein the graceful quantity degrader yields the degraded quantity for each of the products that the customer indicated a reduced quantity thereof, from a time shortfall **(inability to fulfill customer request {due to a time-shortfall or insufficient production capabilities})**, the inverse probability of profit, and from a decremented number of plurality of products **{effective quantity agreed upon after negotiation}** of the customer order.

It is inherent that the degraded quantity can be computed by taking the difference between the initially requested quantity, and the final agreed-upon quantity.

Kennedy et al. does not teach the step of determining the degraded quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller. In addition, Official Notice is taken that it is old and well known in the manufacturing arts, that, when possible, manufacturers will identify the most profitable product in a set (usually by comparing the profit margins of each item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins. It would

have been obvious to one of ordinary skill in the art at the time of invention to modify the

teachings of Kennedy et al. to take the profitability of products into consideration when

determining the reduced quantity, because the resulting invention would result in an

instant analysis of potential increased revenues and profits (by selling more expensive

and/or more profitable items) and the substitution of said items may enable

manufacturers to meet customer demand, as it may require less production time, or is

more readily available.

As per claims 49 and 56, Kennedy et al. teaches a computerized apparatus for

production management comprising:

an excess quantity determiner **(decision process)**, that determines that one or

more customer requests for a plurality of products, exceed a production capacity of the

vendor **(filling customer request is possible {or not possible})** within a prescribed

time period **{date associated with customer order}** [Column 3, lines 65-67, Column 6,

lines 26-42]; and

a reduced quantity degrader, operably coupled to the excess quantity determiner

{operating on the same computer or computer network}, that yields a reduced

quantity **(reissues an altered request, with lower quantities)** [Column 6, lines 26-42].

Kennedy et al. does not teach the step of determining the reduced quantity

based on an inverse profit probability, but does disclose that his invention is for the

purpose of optimizing the profits of the seller. In addition, Official Notice is taken that it is

old and well known in the manufacturing arts, that, when possible, manufacturers will

seek to substitute requested products with similar products with higher profit margins. It

would have been obvious to one of ordinary skill in the art at the time of invention to

modify the teachings of Kennedy et al. to take the profitability of products into

consideration when determining the reduced quantity, because the resulting invention

would result in increased revenues and profits (by selling more expensive and/or more

profitable items) and the substitution of said items may enable manufacturers to meet

customer demand, as it may require less production time, or is more readily available.

As per claims 52 and 59, Kennedy et al. teaches a computerized apparatus for

production management comprising:

an excess quantity determiner **(decision process)**, that determines that one or

more customer requests for a plurality of products exceed a production capacity of the

vendor **(filling customer request is possible {or not possible})** within a prescribed

time period **{date associated with customer order}** [Column 3, lines 65-67, Column 6,

lines 26-42]; and

a reduced quantity determiner, operably coupled to the excess quantity

determiner **{operating on the same computer or computer network}**, that yields a

reduced quantity **(reissues an altered request, with lower quantities)** [Column 6,

lines 26-42], from an inverse probability of profit of the reduced quantity, wherein the

reduced quantity determine further comprises:

a gracefully-decremented quantity determiner, yielding a reduced quantity, operably coupled to the inverse profit probability determiner, wherein the gracefully-decremented quantity is determined for each of the products that the customer indicated a reduced quantity, and determined from a time shortfall, the inverse probability of profit, and from a decremented number of plurality of products [see analysis of claim 11(b)(5) above].

As per claims 53 and 60, Kennedy et al. does not explicitly teaches the computerized apparatus of claim 52, wherein the inverse profit probability is determined from a projected profit of a product in the customer request, and from the profit of the entire customer request.

However, it is inherent that only products in the customer request impact its profitability; in other words, products not in the product order have 0% probability of profit.

11.   Claim 4, 9, 11, 15, 18, 22, 27, 29, 33, 36, 42, 45, 50, 51, 57, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al. (U.S Patent #6,055,519) as applied to claims 13, 31, 39, 43, 49, and 56 above, and further in view of Eder (U.S Patent #5,615,109).

As per claims 4 and 22, Kennedy et al. teaches a computerized method for

production management comprising:

(a)   determining that at least one request for a plurality of products exceeds a

production capacity of a vendor **(whether fulfillment of a customer request is**

possible), wherein the request for a plurality of products includes a quantity associated

with each of the plurality of products from process and inventory operation data and

from customer order data **(customer request data regarding relevant items,**

quantities, and dates are stored) [Column 3, line 64-67, Column 6, lines 30-31]; and

As per (b)   determining a quantity of each of the plurality of products

corresponding to a vendor maximum profit of the requests for a plurality of products,

from a degradation of the quantity associated with at least one of the plurality of

products as a function of the inverse of the probability of profit from the product:

Kennedy et al. does not teach the step of determining the reduced quantity

based on an inverse profit probability, but does disclose that his invention is for the

purpose of optimizing the profits of the seller; thus, Kennedy et al., implicitly teaches the

step of identifying of the most profitable products of a group of products that would

enable the maximization of profits. In addition, Official Notice is taken that it is old and

well known in the manufacturing arts, that, when possible, manufacturers will identify

the most profitable product in a set (usually by comparing the profit margins of each

item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to take the probability of product profitability into consideration when determining the reduced quantity, because the resulting invention would result in an instant analysis of potential increased revenues and profits (by selling more expensive and/or more profitable items) and the substitution of said items may enable manufacturers to meet customer demand, as it may require less production time, or is more readily available.

Although Kennedy et al. does not explicitly teach the step of determining the product quantity corresponding to maximum vendor profit, Eder teaches a profit maximized requisition set created by utilizing multi-objective {maximizing profit, matches production capacity} linear programming techniques [abstract].

Kennedy et al. is directed towards determining an order promise (products and quantities) for fulfilling customer orders used to optimize profits of the seller. Eder teaches a system of generating feasible, profit maximizing requisition sets directed to the analogous art of inventory management; thus, it would have been obvious to one of

ordinary skill in the art at the time of invention to combine the teachings of Kennedy et

al. and Eder because the combination would result in a system yielding a feasible and

maximally profitable product mix based on the probability of profit of products that the

manufacturer could propose to the buyer, hastening the process of determining a

modified customer order, while maximizing profits and ensuring order fulfillment.

As per claims 9, 15, 27, and 33, Kennedy et al. does not explicitly teach the

computerized method of claim 6, wherein the determining (a)(5) further comprises:

(a)(5)(i)   determining a batch objective value for producing and delivering

each of the plurality of products, from the effective quantity of the at least one of the

plurality of products, from the requested quantity of the at least one of the plurality of

products;

(a)(5)(ii)   determining the total production time of the plurality of products

from the batch objective value of each of the plurality of products; and

(a)(5)(iii)   comparing the target time to the total production time of the plurality

of products.

Eder teaches the generation of feasible, profit maximized requisition sets created

by utilizing multi-objective {maximizing profit, matches production capacity} linear

programming techniques [abstract].

It is inherent in the manufacturing arts that profit (batch objective value) can be determined from the production batch size (effective quantity). It is further inherent in the manufacturing arts that the determination of production time is dependent on the quantity of products and production capacities. As the teachings of Eder generate feasible requisition sets, it is inherent that the required production time is compared to the target time, and that all solutions enable fulfillment of the customer order prior to the target time.

Kennedy et al. teaches a system of determining an order promise (products and quantities) for fulfilling customer orders used to optimize profits of the seller. Eder teaches a system of generating feasible, profit maximizing requisition sets directed to the analogous art of inventory management; thus, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Kennedy et al. and Eder because the combination would result in a system yielding a feasible and maximally profitable product mix that the manufacturer could propose to the buyer, hastening the process of determining a modified customer order, while maximizing profits and ensuring order fulfillment.

As per claims 11, 18, 29, 36, 42 and 45, Kennedy et al. teaches the computerized method of claim 4, wherein determining (b) for each product in the order, further comprises:

determining that at least one request for a plurality of products exceeds a

production capacity of a vendor beyond a predetermined margin **(whether fulfillment**

of a customer request is possible) [Column 6, lines 30-31];

(b)(1) deter mining a time shortfall in the production of each of the plurality of

products from actual time to produce all of the plurality of products to be produced

(figure out whether fulfilling customer request is possible {given requested

products, quantities and date}), and from the target time [Column 6, lines 26-38];

(b)(2) com municating to the customer each of the time shortfalls **{the seller**

submits a modified proposal generated due to an inability to fulfill the initial

request} [Column 6, lines 26-38];

(b)(3) receiving from t he customer information representing reduction in the

quantity associated with at least one of the plurality of products **(reissued customer**

request) [Column 6, lines 39-40];

 (b)(5) determining a graceful decrement from the time shortfall, from the profit

inverse probability, and from a decremented number of plurality of products [see

analysis of claim 2 above];

As per (b)(4) determining an inverse profit probability from the profit of a

production of one of the plurality of products in the customer order, and from the profit of

all of the plurality of products in the customer order:

It is inherent in the manufacturing arts that the profitability of a particular product

and corresponding inverse of profit probability (in comparison to other products

comprising an order) can be determined (an analysis of production costs and sale price).

As per (b)(6) updating the objective value from the graceful decrement;

(b)(7) deter mining the actual quantity to be produced for each of the plurality of products, from the graceful decrement, and from the unit time of manufacture; and

(b)(8) deter mining an actual time to produce all of the plurality of products to be produced, from the actual quantity to be produced for each of the plurality of products:

Eder teaches the generation of feasible, profit maximized requisition sets created by utilizing multi-objective {maximizing profit, matches production capacity} linear programming techniques [abstract].

It is inherent that in the generation of an optimal solution set, each incremented (or decremented) quantity of a product requires an updating of the objective value (maximizing vendor profit, minimizing vendor costs, etc.). It is further inherent that the optimal solution set quantifies the actual production quantity for each of the plurality of products, and that the time required to produce the actual production quantity can be determined as a function of comparing production requirements with production capabilities.

Kennedy et al. teaches a system of determining an order promise (products and quantities) for fulfilling customer orders used to optimize profits of the seller. Eder

teaches a system of generating feasible, profit maximizing requisition sets directed to

the analogous art of inventory management; thus, it would have been obvious to one of

ordinary skill in the art at the time of invention to combine the teachings of Kennedy et

al. and Eder because the combination would result in a system yielding a feasible and

maximally profitable product mix that the manufacturer could propose to the buyer,

hastening the process of determining a modified customer order, while maximizing

profits and ensuring order fulfillment.

As per claims 50 and 57, Kennedy et al. teaches the computerized apparatus of

claim 49, wherein the excess quantity determiner further comprises:

a determiner of production time shortfall **(figure out whether fulfilling customer**

request is possible {given requested products, quantities and date}), from the

actual total production time, and a target production time **{customer order data}**,

wherein the production shortfall indicates an excess quantity [Column 3, lines 65-67,

Column 6, lines 26-42].

Although not explicitly taught by Kennedy et al., Eder teaches a determiner of

batch objective values, from an effective quantity of at least one product identified in the

request, and from the corresponding production speed of each of a plurality of product

batches in the request; and a determiner of actual total production time of the at least

one products in the request, from the sum of the batch objective values.

It is inherent that in the generation of an optimal solution set using linear programming techniques, each incremented (or decremented) quantity of a product requires an updating of the objective value (maximizing vendor profit, minimizing vendor costs, etc.). It is further inherent that the optimal solution set quantifies the actual production quantity for each of the plurality of products, and that the time required to produce the actual production quantity can be determined as a function of comparing production requirements with production capabilities.

Kennedy et al. teaches a system of determining an order promise (products and quantities) for fulfilling customer orders used to optimize profits of the seller. Eder teaches a system of generating feasible, profit maximizing requisition sets directed to the analogous art of inventory management; thus, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Kennedy et al. and Eder because the combination would result in a system yielding a feasible and maximally profitable product mix that the manufacturer could propose to the buyer, hastening the process of determining a modified customer order, while maximizing profits and ensuring order fulfillment.

As per claims 51 and 58, Kennedy et al. teaches the computerized apparatus of claim 49, wherein the reduced quantity determiner further comprises:

a gracefully-decremented quantity determiner, operably coupled to the inverse profit probability determiner, wherein the gracefully-decremented quantity is determined

for each of the products that the customer indicated a reduced quantity, and determined

from a time shortfall, the inverse profit probability, and from a decremented number of

plurality of products [see analysis of claim 11(b)(5) above];

Kennedy et al. does not explicitly teaches the step of determining an inverse

profit probability, wherein the inverse profit probability is determined from a projected

profit of a product in the customer request, and from the profit of the entire customer

request.

However, it is inherent that only products in the customer request impact its

profitability; in other words, products not in the product order have 0% probability of

profit.

Although not explicitly taught by Kennedy et al., Eder teaches an objective-value

determiner **(linear programming techniques)**, operably coupled to the gracefully-

decremented quantity determiner, wherein the objective-value is determined for each

product in the customer order **{dependent on the objective value; for instance, if the**

objective value is to maximize profit, the object value for each product is

equivalent to the unit profit margin} from the gracefully-decremented quantity, and

from the previous objective value **{measured as the change in objective value from**

increasing/decreasing quantity of a particular product} [abstract];

an actual-quantity determiner **(linear programming techniques)**, operably

coupled to the objective-value determiner **{located on the same computer, or

network of computers}**, wherein the actual-quantity is determined from the objective

value **{the optimal solution generated by the linear programming techniques

yields a product quantity associated with the maximum objective value}**, a

production speed of the product, and from the inventory quantity of the product

{constraints taken into consideration in linear programming techniques}; and

a total-production-time determiner **(linear programming techniques)**, operably

coupled to the actual-quantity determiner **{located on the same computer, or network

of computers}**, wherein the total-production-time is determined as the sum of objective

value of each product **{the production time required for a single unit of every

product is known; the linear programming techniques determines the quantity of

products required; thus, the total production time is the product of the quantity of

products with the production time per unit. Alternatively, the objective function

may be to minimize production time; in this case, the objective value of each

product is the production time per unit}**.

Conclusion

12.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Peter Choi whose telephone number is (571) 272 6971.

The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Peter Choi
Examiner
Art Unit 3623

PC

February 28, 2006

SUSANNA M. DIAZ
PRIMARY EXAMINER

AU 3623